AMENDMENTS TO THE CLAIMS

All claims that will be pending and under consideration in the present application upon entry of the amendments are shown below. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.–24. (Canceled).

25. (Currently Amended) A computer-implemented method for processing hereditary data related to the use of clinical agents by a person, the method comprising the steps of:

displaying a graphical user interface (GUI) on a display device, wherein the GUI is configured to solicit input from a clinician to ascertain whether to authorize performing a genetic test on a patient, wherein the GUI displays fields that reveal an identification of the person and an identification of the genetic test to be performed, wherein the GUI is configured to receive approval from the clinician to carry out the genetic test, and wherein the GUI is configured to receive a result value of the genetic test for the person;

utilizing the genetic test result value to query a computerized table listing polymorphism values and atypical clinical events associated with the polymorphism values;

determining if the genetic test result value is a polymorphism value associated with an atypical clinical event;

when the genetic test result value is the polymorphism value, accessing a list of risk-associated agents that cause the associated atypical clinical event; and

outputting an interpretation of the genetic test result value and the list of risk-associated agents, wherein outputting the interpretation comprises showing to the clinician a notification window within the GUI that displays the list of risk-associated agents, a warning of effects of the polymorphism value, ~~and~~ alternate clinical agents that are not associated with the polymorphism value, and a button that, when selected, directs the clinician to addition information regarding the association of the clinical agent and a genetic mutation linked to the polymorphism value.

26. (Original) The method of claim 25, further comprising the step of determining if the person has been exposed to an agent on the list of risk-associated agents.

27. (Previously Presented) The method of claim 26, wherein the step of determining if the person has been exposed includes accessing the EMR of the person.

28. (Previously Presented) The method of claim 27, wherein the EMR is stored within a comprehensive healthcare system.

29. (Previously Presented) The method of claim 26, further comprising initiating a clinical action if the person has been exposed to an agent on the list of risk-associated agents, wherein the clinical action comprises:

automatically canceling the clinical actions associated the list of risk-associated agents;

automatically recommending alternate clinical actions based on querying the genetic test result value against the computerized table; and

upon approval from the clinician, automatically ordering one or more of the alternate clinical actions.

30. (Original) The method of claim 29, wherein the clinical action is generating an electronic message to inform a clinician to no longer administer the agent.

31.–54. (Canceled).

55. (Currently Amended) A computer system for processing hereditary data related to the use of clinical agents by a person, comprising:

a displaying component for displaying a graphical user interface (GUI) that is configured to solicit input from a clinician to ascertain whether to authorize performing a genetic test on a patient, wherein the GUI displays fields that reveal an identification of the person and an identification of the genetic test to be performed;

a receiving component that, upon determining that a gene is associated with a clinical agent, performs a process for automatically obtaining a genetic test result value for the associated gene of the patient comprising:

(a) receiving from the displaying component identification of the patient to whom the clinical agent is to be administered and proper authorization to access an electronic medical record (EMR) of the patient; and

(b) utilizing the identification and the proper authorization from the clinician to access patient information within the EMR of the patient stored within a comprehensive healthcare system;

the receiving component that, upon determining that the genetic test result value for the patient is not available in the EMR, performs a process for obtaining a genetic test result value for the associated gene of the patient comprising:

(a) determining whether to request authorization from a clinician to carry out the genetic test based on ~~two~~ three criteria, a cost of the genetic test, whether the genetic test is available, and a likelihood of a genetic variation based on demographic information of the patient; ~~and~~

(b) when the three criteria indicate authorization is needed, seeking the clinician's authorization for the genetic test by displaying a genetic test ordering window at the GUI; and

~~(b)~~ (c) when the three criteria indicate no authorization is needed, ~~when authorization is requested of the clinician, receiving approval from the clinician to carry out the genetic test to find a genetic test result value for the person~~ automatically ordering the genetic test to determine the genetic test result value for the associated gene of the patient;

a querying component for querying a computerized table listing polymorphism values and atypical clinical events associated with the polymorphism values;

a first determining component that determines if the genetic test result value is a polymorphism value associated with an atypical clinical event;

an accessing component that accesses a list of risk-associated agents if the determining component determines that a genetic test result value is polymorphism value associated with an atypical event; and

an outputting component that outputs an interpretation of the genetic test result value and the list of risk-associated agents.

56. (Original) The computer system of claim 55, further comprising a second determining that determines if the person has been exposed to an agent on the list of risk-associated agents.

57. (Original) The computer system of claim 56, wherein the second determining component determines if the person has been exposed includes an accessing component that accesses an electronic medical record of the person.

58. (Original) The computer system of claim 57, wherein the electronic medical record is stored within a comprehensive healthcare system.

59. (Original) The computer system of claim 56, further comprising an initiating component that initiates a clinical action if the person has been exposed to an agent on the list of risk-associated agents.

60. (Original) The computer system of claim 59, wherein the clinical action is generating an electronic message to inform a clinician to no longer administer the agent.

61.–84. (Canceled).

85. (Currently Amended) One or more computer storage media having computer-executable instructions embodied thereon that, when executed, perform a method for processing hereditary data related to the use of clinical agents by a person, the method comprising the steps of:

displaying a graphical user interface (GUI) that is configured to solicit input from a clinician to ascertain whether to authorize performing a genetic test on a patient, wherein the GUI displays fields that reveal an identification of the person and an identification of the genetic test to be performed, that is configured

to receive ~~approval~~ authorization from the clinician to carry out the genetic test, and that is configured to receive result value of the genetic test for the person upon carrying out the genetic test;

when the genetic test result is unavailable and when personal information about the person is accessible, performing the steps comprising:

(a) utilizing the personal information about the person for calculating a first likelihood that the person displays genetic variability linked with genes associated with the genetic test ~~when the personal information is accessible~~, wherein the personal information includes one or more demographic factors; and

(b) displaying a notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents the first likelihood that the person displays genetic variability linked with genes;

when the genetic test result is unavailable and when the personal information about the person is inaccessible, performing the steps comprising:

(a) utilizing genetic variability of a general population for calculating ~~the~~ a second likelihood that the person displays genetic variability linked with genes associated with the genetic test; and

(b) displaying the notification window in the GUI that solicits authorization from the clinician to carry out the genetic test, wherein the notification window presents the second likelihood that the person displays genetic variability linked with genes;

when the genetic test result is available upon conducting the genetic test, using the genetic test result to determine ~~determining~~ a severity of each atypical event that could occur upon the person using the clinical agents;

showing in the notification window in the GUI ~~generating a GUI that shows to the clinician risk information comprising the likelihood of genetic variability and~~ the atypical-event severity associated with the genetic variability;

querying a computerized table listing polymorphism values and atypical clinical events associated with the polymorphism values;

determining if the genetic test result ~~value~~ is a polymorphism value associated with an atypical clinical event, and if so, accessing a list of risk-associated agents; and

outputting an interpretation of the genetic test result ~~value~~ and the list of risk-associated agents~~, wherein outputting includes automatically ordering follow-up tests, automatically scheduling counseling for the person, and automatically storing the interpretation in the person's electronic medical record~~.

86. (Previously Presented) The computer storage media of claim 85, further comprising the step of determining if the person has been exposed to an agent on the list of risk-associated agents.

87. (Previously Presented) The computer storage media of claim 86, wherein the step of determining if the person has been exposed includes accessing an electronic medical record of the person, wherein the heredity data and the electronic medical record are accessible and updatable by a healthcare system, and wherein updating comprises integrating the heredity

data with newfound knowledge associating the heredity data with the risk-associated clinical agents.

88. (Previously Presented) The computer storage media of claim 87, wherein the electronic medical record is stored within a comprehensive healthcare system.

89. (Previously Presented) The computer storage media of claim 86, further comprising the step of initiating a clinical action if the person has been exposed to an agent on the list of risk-associated agents.

90. (Canceled).

91. (Currently Amended) A computer-implemented method for processing hereditary data related to the use of clinical agents by a person, comprising the steps of:

receiving a genetic test result value for the person;

querying a computerized table listing polymorphism values and atypical clinical events associated with the polymorphism values, wherein the computerized table is stored on a processing unit;

utilizing the processing unit to determine if the genetic test result value is a polymorphism value associated with an atypical clinical event, and if so, accessing a list of risk-associated agents;

outputting an interpretation at a graphical user interface (GUI) of the genetic test result value and the list of risk-associated agents, wherein the interpretation indicates that the person has a genetic predisposition to agents on the list of risk-associated agents that causes one or more atypical reactions for the person;

when the person has been exposed to one or more of the agents on the list of risk-associated agents, ascertaining whether to automatically generate a low-risk clinical response or a high-risk clinical response ~~based on whether the person has been exposed to an agent on the list of risk-associated agents and~~ based on whether a dosage of the one or more agents exceeds a predetermined dangerous level;

~~if~~ when the person has been exposed to a dosage of the one or more agents on the list of risk-associated agents that is above the predetermined dangerous level, automatically generating the high-risk clinical response that includes performing the actions comprising:

(a) reducing the dosage of the agent to an amount below the predetermined dangerous level; and

(b) placing an alternative order for an agent that is absent from the list of risk-associated agents; and

otherwise, automatically generating the low-risk clinical response that includes performing the actions comprising:

(a) adding a comment to the person's electronic medical record indicating that no risks were determined from the genetic test result value; and

(b) outputting an interpretation at the GUI of the low-risk clinical response, wherein the interpretation indicates the genetic test result value is not associated with any know risks.

92. (Previously Presented) The method of claim 25, further comprising the steps of:

accessing the person's demographic information stored in the electronic medical record;

utilizing the demographic information in cooperation with the computerized table listing polymorphism values and atypical clinical events associated with the polymorphism values to determine a likelihood of a genetic variation existing in the person and a severity of an atypical event associated with the genetic variation; and

displaying the GUI based on determined likelihood and severity.

93. (Previously Presented) The method of claim 91, further comprising the steps of:

determining that the person has not had a genetic test performed;

producing a warning to the clinician to suspend use of the clinical agents on the person pending results from the genetic test;

determining whether to request authorization from a clinician in accordance with a cost of the genetic test and a likelihood of a genetic variation based on demographic information of the patient;

when the determination indicates not to request authorization, automatically ordering the genetic test; and

when the determination indicates to request authorization, allowing the clinician to order the genetic test in a field of an ordering window.